IN THE CLAIMS:

1. (Original) An arc tube comprising:

a glass tube having a turning part, and being wound around an axis from the turning part to at least one end of the glass tube, so as to form a spiral part; and

a phosphor coating provided on an inner surface of the glass tube, wherein

at any cross section of the glass tube of the spiral part, the phosphor coating is thicker in a first area than in a second area, the first and second areas facing each other in a direction that is parallel to the axis and that passes through a center of the cross section, the first area being nearer the end of the glass tube than the second area is.

2. (Original) The arc tube of Claim 1, wherein;

the phosphor coating provided on the first area increases in thickness from the turning part towards the glass-tube end.

3. (Original) The arc tube of Claim 1, wherein:

the glass tube is wound around the axis from the turning part to both ends of the glass tube.

4. (Original) The arc tube of Claim 1, wherein:

a mass per unit area of the phosphor coating provided on the second area is in a range of 2 mg/cm^2 to 12 mg/cm^2 inclusive.

5. (Original) The arc tube of Claim 1, wherein:

a mass per unit area of the phosphor coating provided on the fist area is in a range of 5 mg/cm^2 to 30 mg/cm^2 inclusive.

6. (Original) The arc tube of Claim 1, wherein

the phosphor coating is a three band phosphor coating.

7. (Original) A discharge lamp comprising the arc tube of Claim 1.

8-13. (Cancelled)